

## Abstract

An optical apparatus for coherent detection of an input optical beam. The apparatus includes a beam splitter for splitting the input optical beam into a first component and a second component; an optical delay device arranged to receive the second component, the optical delay device imposing an intentional delay in the second component of the input optical beam; and an adaptive beam combiner coupled to receive the second component with a delay imposed thereon by the optical delay device; and the first component from the beam splitter. The adaptive beam combiner has two exiting components: a first exiting component being representative of the difference of the first and second components received thereby and a second exiting component being representative of the sum of the first and second components received thereby. A detector arrangement is provided for receiving and detecting the first and second exiting components from the adaptive beam combiner.